

**What is claimed is:**

- 1        1.    A method for fabricating a semiconductor device  
2    having a stacked-gate structure, comprising the steps of:  
3        forming a polysilicon layer overlying a substrate,  
4        insulated from the substrate by a dielectric  
5        layer;  
6        forming a metal-flash layer overlying the polysilicon  
7        layer;  
8        forming a tungsten nitride layer overlying the metal-  
9        flash layer;  
10      annealing the tungsten nitride layer using nitrogen and  
11      hydrogen gases; and  
12      forming a tungsten layer overlying the tungsten nitride  
13      layer.
- 1        2.    The method as claimed in claim 1, further forming  
2    a cap layer overlying the tungsten layer.
- 1        3.    The method as claimed in claim 1, further cleaning  
2    the surface of the polysilicon layer.
- 1        4.    The method as claimed in claim 3, wherein the  
2    surface of the polysilicon layer is cleaned with diluted  
3    hydrofluoric acid.
- 1        5.    The method as claimed in claim 1, wherein the  
2    metal-flash layer is formed by self-aligned silicide  
3    (SALICIDE) process.
- 1        6.    The method as claimed in claim 5, wherein the  
2    titanium layer has a thickness of about 10 to 30Å.

1           7.    The method as claimed in claim 5, wherein the  
2 metal-flash layer comprises Ti, Co, or Ni.

1           8.    The method as claimed in claim 1, wherein a flow  
2 ratio of nitrogen to hydrogen is about 4:1 to 3:2.

1           9.    The method as claimed in claim 1, wherein the  
2 tungsten nitride layer is annealed at 800 to 1000°C.

1           10.   The method as claimed in claim 1, wherein the  
2 tungsten nitride layer is annealed for 50 to 100sec.

1           11.   A method for fabricating a semiconductor device  
2 having a stacked-gate structure, comprising the steps of:  
3           forming a polysilicon layer overlying a substrate,  
4           insulated from the substrate by a dielectric  
5           layer;  
6           forming a metal-flash layer overlying the polysilicon  
7           layer;  
8           forming a tungsten nitride layer overlying the metal-  
9           flash layer;  
10          forming a tungsten layer overlying the tungsten nitride  
11          layer; and  
12          annealing the tungsten layer and the tungsten nitride  
13          layer using nitrogen and hydrogen gases.

1           12.   The method as claimed in claim 11, further forming  
2 a cap layer overlying the tungsten layer.

1           13.   The method as claimed in claim 11, further  
2 cleaning the surface of the polysilicon layer.

1        14. The method as claimed in claim 13, wherein the  
2 surface of the polysilicon layer is cleaned with diluted  
3 hydrofluoric acid.

1        15. The method as claimed in claim 11, wherein the  
2 metal-flash layer is formed by self-aligned silicide  
3 (SALICIDE) process.

1        16. The method as claimed in claim 15, wherein the  
2 titanium layer has a thickness of about 10 to 30Å.

1        17. The method as claimed in claim 15, wherein the  
2 metal-flash layer comprises Ti, Co, or Ni.

1        18. The method as claimed in claim 11, wherein a flow  
2 ratio of nitrogen to hydrogen is about 4:1 to 3:2.

1        19. The method as claimed in claim 11, wherein the  
2 tungsten layer and the tungsten nitride layer are annealed  
3 at 800 to 1000°C.

1        20. The method as claimed in claim 11, wherein the  
2 tungsten layer and the tungsten nitride layer are annealed  
3 for 50 to 100sec.